

L10 ANSWER 9 OF 49 MEDLINE  
AN 1998088074 MEDLINE  
DN 98088074  
TI The biologic basis of **ultrasonic liposuction**.  
AU Lawrence N; Coleman W P 3rd  
SO DERMATOLOGIC SURGERY, (1997 Dec) 23 (12) 1197-200. Ref: 19  
Journal code: B2S. ISSN: 1076-0512.  
CY United States  
DT Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LA English  
FS Priority Journals; Cancer Journals  
EM 199804  
EW 19980401  
AB The use of **ultrasound** to facilitate **liposuction**  
is a new and potentially exciting area of clinical and research  
interest. Whether or not this will result in important changes in  
the practice of **liposuction** remains to be determined.

procedure.

L10 ANSWER 4 OF 49 MEDLINE  
AN 1998045765 MEDLINE  
DN 98045765  
TI **Ultrasound-assisted liposuction** [letter].  
AU Teimourian B  
SO PLASTIC AND RECONSTRUCTIVE SURGERY, (1997 Nov) 100 (6) 1623-5.  
Journal code: P9S. ISSN: 0032-1052.  
CY United States  
DT Letter  
LA English  
FS Abridged Index Medicus Journals; Priority Journals  
EM 199802  
EW 19980204

L2 ANSWER 29 OF 49 MEDLINE  
 AN 92262593 MEDLINE  
 DN 92262593  
 TI **Large-volume suction lipectomy:** an  
 analysis of 108 patients [see comments].  
 CM Comment in: Plast Reconstr Surg 1993 Apr;91(5):962-3  
 AU Courtiss E H; Choucair R J; Donelan M B  
 CS Department of Surgery, Harvard Medical School, Newton Lower Falls,  
 Mass..  
 SO PLASTIC AND RECONSTRUCTIVE SURGERY, (1992 Jun) 89 (6) 1068-79;  
 discussion 1080-2.  
 Journal code: P9S. ISSN: 0032-1052.  
 CY United States  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Abridged Index Medicus Journals; Priority Journals  
 EM 199208  
 AB **Suction lipectomy** was initially advocated for  
 the treatment of localized collections of fat and for the removal of  
 less than 1500 ml of material. However, many patients wished to have  
 multiple areas treated or had diffuse collections of fat. In such  
 instances, the removal of over 1500 ml of material and  
 circumferential lipectomy are necessary to provide optimal aesthetic  
 results. However, when over 1500 ml of material is removed,  
 anesthetic requirements, fluid replacement, and treatment of blood  
 loss become important if the operation is to be performed safely. We  
 have treated 108 patients who had over 1500 ml of material removed.  
 Eighty-eight percent of the patients were female; 12 percent were  
 male. Using the body-mass index, 3 percent of patients were  
 underweight, 70 percent were normal weight, and 27 percent were  
 overweight. Fifty-five patients (51 percent) had 1500 to 2499 ml of  
 material removed, 26 patients (24 percent) had 2500 to 3499 ml  
 removed, 16 patients (15 percent) had 3500 to 4499 ml removed, and  
 11 patients (10 percent) had over 4500 ml removed. All patients were  
 treated in the hospital; 44 percent were admitted after surgery. A  
 total of 227 units of autologous and 2 units of homologous blood  
 were transfused. As measured by a computerized monitor, the average  
 amount of blood in the material removed from thighs was 30 percent;  
 from abdomens, the blood loss was 45 percent. The aesthetic results  
 were generally excellent. No complications were encountered. A few  
 patients developed undesired sequelae, the most common of which was  
 seroma formation, which occurred in 19 percent of those who had  
 suction of abdominal-wall fat. We believe that **large-volume  
 suction lipectomy** is safe and efficacious,  
 provided attention is directed to such important aspects of patient  
 care as anesthesia, fluid replacement, and blood loss.

L4 ANSWER 1 OF 3 MEDLINE  
 AN 97428753 MEDLINE  
 DN 97428753  
 TI **[Lipoemulsification** versus lipoaspiration. Comparison of intraoperative blood loss and surgery time].  
 Lipoemulsificazione verso lipoaspirazione. Confronto fra le perdite ematiche intraoperatorie ed i tempi operativi.  
 AU Palmieri B; Bosio P; Catania N; Gozzi G  
 CS Cattedra di Semeiotica Chirurgica, Universit`a degli Studi, Modena.. palmieri@c220.unimo.it  
 SO MINERVA CHIRURGICA, (1997 Jun) 52 (6) 801-5.  
 Journal code: N3I. ISSN: 0026-4733.  
 CY Italy  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA Italian  
 EM 199712  
 EW 19971202  
 AB Blood loss due to liposuction is one of the main problems in this kind of surgery, blood volume being up to 30%-35% of the whole liposucked volume. We studied the possible lower impact of ultrasound lipolysis in order to obviate this non negligible problem. For this purpose we treated 10 patients, females, aged between 28 and 55, such obese to overweight between 50% and 200%. These patients underwent ultrasound lipolysis surgery after any dietetic or any other treatment against obesity. No patient dropped out of the study. Each patient was treated, under general anesthesia, in a region included between an imaginary horizontal line passing through the umbilicus and another one through the middle of the femur. Thirty minutes after a bilateral infiltration with an epinephrine solution (1:500000 diluted, 28 C) 2 l volume each side, the right side was treated with the liposucking cannula (0.4 cm diameter), the left one underwent ultrasound lipolysis with a titanium probe (0.5 cm diameter, SMEI Casale Monferrato, Italy). A liposucking probe every 10 minutes into the left side was inserted. Haemoglobin was detected (according to the method of Goodpasture) in the liposucked material. The result showed a statistically significant difference between the blood rate in the lipoaspirate and that one in the ultrasound lysed material. Ultrasound lipolysis is slower than lipoaspiration, but it also shows less risk of hemorrhage and fat embolism.

L4 ANSWER 2 OF 3 MEDLINE  
 AN 97428752 MEDLINE  
 DN 97428752  
 TI **[Lipoemulsification**. A histological study on the action of ultrasound, access site and adipose tissue].  
 Lipoemulsificazione. Studio istologico sull'azione degli ultrasuoni, sulla via di accesso ed il tessuto adiposo.  
 AU Palmieri B; Bosio P; Catania N; Criscuolo M; Gozzi G  
 CS Cattedra di Semeiotica Chirurgica, Universit`a degli Studi, Modena.. palmieri@c220.unimo.it  
 SO MINERVA CHIRURGICA, (1997 Jun) 52 (6) 795-800.  
 Journal code: N3I. ISSN: 0026-4733.  
 CY Italy  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA Italian  
 EM 199712  
 EW 19971202

AB A new mini-invasive technique for the lysis of subcutaneous adipose tissue has emerged in recent years. This directly applies ultrasounds to the tissue by titanium probes. Ultrasounds act on parenchyma tissues, saving the structure and integrity of the blood vessels. Our study show histological features of the subcutaneous adipose tissue evolution just ultrasound-treated up to 30 days after surgery. Five obese female patients underwent the treatment by anesthesia. Before surgery the sites to treat were topically injected with sterile, hypotonic, apyrogen saline solution added with adrenaline. Biopsies have been taken intraoperatively from the border cutis of the holes made for the introduction of the titanium probes and from the subcutaneous adipose tissue. Biopsies have also been taken during a follow-up at 2, 5, 15 and 30 days postoperatively. Drains were positioned in the treated sites for at least 72 hours. The same sites were sutured so as to make later follow-up biopsies easier. Histological specimens were considered according to three dying methods: eosin-haematoxylin, Gomori and acetic orcein. We observed, as a confirmation the safety of the adipose tissue blood vessels, and the substitution of the destroyed adipose tissue with a microfibrillar connective tissue not subject to a sclerogenic evolution.

L4 ANSWER 3 OF 3 MEDLINE

AN 94268758 MEDLINE

DN 94268758

TI [Ultrasonic **lipoemulsification**: a working definition and ex-vivo study on human adipose tissue].  
Lipoemulsificazione ultrasonica: definizione operativa e studio ex-vivo su tessuto adiposo umano.

AU Palmieri B; Criscuolo M; Gozzi G

CS Cattedra di Semeiotica Chirurgica, Universit`a degli Studi di Modena..

SO MINERVA CHIRURGICA, (1994 Jan-Feb) 49 (1-2) 71-5.

Journal code: N3I. ISSN: 0026-4733.

CY Italy

DT Journal; Article; (JOURNAL ARTICLE)

LA Italian

EM 199409

AB On the basis of previous reports by other authors which have become increasingly numerous over the past years, we have focused our attention on the use of ultrasonic energy in the medical field to resolve medical and cosmetic problems, such as lipodystrophy and diffuse subcutaneous adiposity. In order to standardise the dissolution times of human subcutaneous adipose tissue we used a ultrasonic generator operating at a constant frequency of 19800 Hz, but which was able to emit a range of power from 0 to 100 Watt. The ultrasounds were applied (according to a scale of power) using a titanium probe to fat samples with a volume of 1 cm until each sample had fully dissolved. This allowed the levels of greatest working efficiency to be established for the most commonly used probes.

L8 ANSWER 23 OF 31 MEDLINE  
AN 93212049 MEDLINE  
DN 93212049  
TI **Liposculpture** sans suction [letter].  
AU Goodstein W A; Hoefflin S M  
SO PLASTIC AND RECONSTRUCTIVE SURGERY, (1993 Apr) 91 (5) 966-7.  
Journal code: P9S. ISSN: 0032-1052.  
CY United States  
DT Letter  
LA English  
FS Abridged Index Medicus Journals; Priority Journals  
EM 199307

L8 ANSWER 19 OF 31 MEDLINE  
AN 95296600 MEDLINE  
DN 95296600  
TI [Ultrasonic lipolysis. **Liposculpture** with ultrasound].  
La lipolyse ultrasonique. **Liposculpture** aux ultrasons.  
AU Maillard G F; De Saint-Cyr B C; Bussien R  
SO REVUE MEDICALE DE LA SUISSE ROMANDE, (1995 Mar) 115 (3) 253-6.  
Journal code: SR5. ISSN: 0035-3655.  
CY Switzerland  
DT Journal; Article; (JOURNAL ARTICLE)  
LA French  
EM 199509

L8 ANSWER 8 OF 31 MEDLINE  
 AN 1998088076 MEDLINE  
 DN 98088076  
 TI Utilizing external ultrasonic energy to improve the results of  
 tumescent **liposculpture**.  
 AU Cook W R Jr  
 CS Coronado Skin Medical Center, Inc., California, USA.  
 SO DERMATOLOGIC SURGERY, (1997 Dec) 23 (12) 1207-11.  
 Journal code: B2S. ISSN: 1076-0512.  
 CY United States  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Priority Journals; Cancer Journals  
 EM 199804  
 EW 19980401  
 AB BACKGROUND: External ultrasound has been used safely for many years  
 for therapy and diagnosis by multiple medical specialists. It has  
 also been utilized safely to treat postoperative swelling after  
**liposculpture**. Recently, internal tumescent ultrasonic  
**liposculpture** has been introduced. Since internal and  
 external ultrasonic devices utilize injected fluid to create an  
 environment in the fat that efficiently transmits sound waves, it  
 seemed logical that external ultrasound incorporated with tumescent  
**liposculpture** would be successful. This study was designed  
 to compare tumescent **liposculpture** combined with external  
 ultrasound with tumescent **liposculpture** alone. OBJECTIVE:  
 A side-by-side comparison of the results of tumescent  
**liposculpture** combined with external ultrasound versus  
 tumescent **liposculpture** alone was performed. METHODS:  
 Thirty patients were infused with therapeutic amounts of tumescent  
 solution to achieve anesthesia and vasoconstriction in the areas to  
 be treated. External ultrasound was then applied to one-half of the  
 areas to be treated in a randomized fashion. Either the left side or  
 the right side of the body was treated with ultrasound.  
**Liposculpture** was then performed using a variety of  
 cannulas. Evaluations were made of the temperature of the tissues,  
 the ease of cannula movement by the surgeon, and the time of  
 performing the technique in each area. Postoperatively, the amount  
 of bruising and swelling were evaluated, as was the discomfort of  
 the patient. RESULTS: Clinical assessment results revealed that  
 external ultrasound combined with tumescent **liposculpture**  
 was easier for the surgeon, requiring less physical effort with less  
 operating time, and less bruising, swelling, and discomfort for the  
 patient postoperatively. CONCLUSIONS: External ultrasound combined  
 with tumescent **liposculpture** produced significant doctor  
 and patient benefit both operatively and postoperatively. Ongoing  
 studies are currently being performed to evaluate higher wattage  
 ultrasonic units.



L10 ANSWER 40 OF 49 MEDLINE  
AN 93034635 MEDLINE  
DN 93034635  
TI **Ultrasonic liposculpturing.**  
AU Zocchi M  
SO AESTHETIC PLASTIC SURGERY, (1992 Fall) 16 (4) 287-98.  
Journal code: 2WN. ISSN: 0364-216X.  
CY United States  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 199301  
AB The author describes a revolutionary body contouring technique based on the surgical use of **ultrasonic** energy. It allows the selective destruction of only excess adipose tissue. The technique is based on three fundamental steps: (1) preparation of the areas to be treated with a large infiltration of a special solution, (2) treatment of the areas with **ultrasonic** energy through special titanium probes, (3) manual remodeling of the treated areas to eliminate the fluid from the bursted adipocytes (fatty acids). The advantages of this new technique are selective destruction of just the undesired tissues, elimination of the fluid from the adipose tissues, and the possibility of a real "lifting" of the skin of the treated areas, and a reduction of physical strain on the surgeon. The author has already treated more than 280 patients with excellent results and without contraindications or undesired side effects. The fundamental steps of **ultrasonic liposculpturing**, including a description of the physical principles on which the technique is based, are presented.

L10 ANSWER 29 OF 49 MEDLINE

AN 95350428 MEDLINE

DN 95350428

TI [Ultrasonic suction lipectomy. A mini-invasive treatment of obesity].

La liposcultura con ultrasuoni. Un trattamento miniinvasivo dell'obesit`a.

AU Palmieri B; Bosio P; Catania N; Gozzi G

CS Cattedra di Semeiotica Chirurgica, Universit`a, Modena..

SO RECENTI PROGRESSI IN MEDICINA, (1995 Jun) 86 (6) 220-5.

Journal code: R1T. ISSN: 0034-1193.

CY Italy

DT Journal; Article; (JOURNAL ARTICLE)

LA Italian

EM 199511

AB The safety of ultrasounds **lipolysis** in the treatment of local obesity and lipodystrophies versus suction lipectomy (less blood loss because of a lower impact on blood vessels network, and less mortality) induced us to combine these mini-invasive techniques in the treatment of obese patients. Between 1991 and 1994 we treated 205 patients (146 females, 59 males, 18-59 range age), affected by 1st degree obesity (44.4%), 2nd degree obesity (27.3%) and 3rd degree obesity (28.3%), accordingly to the following schedule: 1) general anesthesia; 2) subdermal infiltration of the operating sites of a cold sodium chloride (0.9%) epinephrine solution (1:10(5), 8 degrees C); 3) 0.5 cm cutaneous incisions; 4) introduction of titanium tips as ultrasounds source; 5) insertion of suction lipectomy probes to remove the adipose tissue destroyed by ultrasounds; 6) drainage of the wide subcutaneous space; 7) setting of elastic bandages. Mortality was zero and very low side effects have been observed. We report an improvement of blood glucose and triglycerides level and blood pressure 30 days after surgery. Fair late postoperative improvement of the blood glucose tolerance test have been seen in 3 cases.

L10 ANSWER 24 OF 49 MEDLINE  
AN 97062652 MEDLINE  
DN 97062652  
TI **Ultrasonic** assisted lipoplasty. Technical refinements and clinical evaluations.  
AU Zocchi M L  
CS Aesthetic Plastic and Reconstructive Surgery, Torino, Italy.  
SO CLINICS IN PLASTIC SURGERY, (1996 Oct) 23 (4) 575-98.  
Journal code: DHX. ISSN: 0094-1298.  
CY United States  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 199704  
EW 19970403  
AB Since the late 1970s, when suction-assisted lipoplasty was developed, many surgeons have tried to improve methodology to get more predictable results and reduce potential side effects and complications. **Ultrasonic** assisted lipoplasty, in which fat tissues are selectively targeted by the surgical action, represents the most advanced and innovative evolution of traditional **liposuction**, offering reduced trauma and blood loss and a more specific and complete treatment of the very superficial fat layers. The author describes the physical and technical principles of this technique, with a complete overview of his clinical experience, including tricks, traps, and complications.

L10 ANSWER 18 OF 49 BIOSIS COPYRIGHT 1998 BIOSIS  
AN 97:127309 BIOSIS  
DN 99419122  
TI Clinical application of **ultrasonic liposculpturing**  
AU Zhang Qingguo; Wu Wei; Zheng Zhisheng; et al  
CS Nanjing Railway Med. Coll., Nanjing 210009, China  
SO Zhongguo Chaosheng Yixue Zazhi 13 (1). 1997. 56-57. ISSN: 1002-0101  
LA Chinese  
AB Twenty-three patients with localized fat deposit were treated with  
the **ultrasonic liposculpturing**. The  
**ultrasonic liposculpturing**. The mechanism is  
selective destruction of surplus adipose tissues. It is less  
traumatic with less blood loss and effective operation. The  
**ultrasonic** surgical instrument designed by us is introduced.

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L10 ANSWER 17 OF 49 BIOSIS COPYRIGHT 1998 BIOSIS  
AN 97:345887 BIOSIS  
DN 99645090  
TI The clinical use of **ultrasonic liposculpturing**.  
AU Wang Xiaoyuan; Feng Huifeng; Wang Xuewan; Wang Zhuo  
CS ARS Med. Plastic Surg. Cent., Beijing Med. Univ., Beijing 100034,  
China  
SO Zhongguo Chaosheng Yixue Zazhi 13 (5). 1997. 62-64. ISSN: 1002-0101  
LA Chinese  
AB The **ultrasonic** liposculpturing is a new plastic operation.  
From 1994 up to now 232 cases have received this operation resulted  
in destroying excess subcutaneous adipose tissues by the cavitation  
effect of the **ultrasound** wave. Satisfactory cosmetic  
results were obtained without contraindication and serious side  
effect.

L10 ANSWER 13 OF 49 MEDLINE  
 AN 97351397 MEDLINE  
 DN 97351397  
 TI **Ultrasonic liposculpturing**: extrapolations from  
 the analysis of in vivo sonicated adipose tissue.  
 AU Adamo C; Mazzocchi M; Rossi A; Scuderi N  
 CS Department of Experimental and Clinical Medicine, University of  
 Reggio Calabria, Italy.  
 SO PLASTIC AND RECONSTRUCTIVE SURGERY, (1997 Jul) 100 (1) 220-6.  
 Journal code: P9S. ISSN: 0032-1052.  
 CY United States  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Abridged Index Medicus Journals; Priority Journals  
 EM 199709  
 EW 19970904  
 AB The **ultrasonic liposculpturing** technique is  
 currently gaining increasing popularity. Although **ultrasound**  
 is an accepted part of our diagnostic medical practice, the way in  
 which it interacts with solid living tissue is still a complex and  
 unsolved biophysical problem. Very few studies, if any, have  
 followed the effects of diffusion of this intriguing technique on  
 the fields of biosafety and interaction mechanisms. We evaluate the  
 results of our standard **ultrasound liposculpturing**  
 technique in order to recognize the physical mechanism-thermal,  
 cavitation, or "direct"-involved in the damaging process. Our  
 microscopic analysis of sonicated adipose tissue confirms that  
**ultrasound** is highly selective in its action, producing  
 disruption of macromolecules and cellular structures probably  
 through microstreaming tissue movement. The results of  
**ultrasonic liposculpturing** and standard suction  
 lipoplasty are compared. The main advantages of this new technique  
 are the possibility of a very selective destruction of adipose  
 tissue and the prospective solution to such delicate problems as the  
 irregularity of cellulite.